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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/971,099      | 10/03/2001  | Cynthia C. Bamdad    | M01015/70066 TJO    | 2127             |

23628 7590 01/05/2004

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EXAMINER

DO, PENSEE T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1641

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/971,099

Applicant(s)

BAMDAD, CYNTHIA C.

Examiner

Pensee T. Do

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the preamble seems to be incomplete. The method for doing what? It is unclear as to what the purpose of the method is, a method of detecting, quantifying, or binding?

Claim 1 is indefinite for reciting "magnetically drawing a first article...and second article". The first and second article are not defined as comprising any magnetic means for it to be "magnetically" drawn. Therefore, how are these articles become attracted to a magnet (if that is the means for magnetically drawing the articles).

Claim 4 is indefinite. The first agent as being free from the first article? or bound with the first article? If the first agent as bound to the first article is being referred, please clarify in the claim. Furthermore, if the first agent is bound to the first article, then where would the binding partner bind? What is the spatial relationship between the binding partner and the first article?

Claim 9 is indefinite because it is unclear of how the electrode can draw a magnetic bead to its surface. The electrode does not have any magnetic field.

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Claim 11 is unclear. Is the signaling entity part of the binding partner? Which is directly immobilized on the first article, the signaling entity or the binding partner? Or both? See also claim 12 for the same problem.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhou et al. (US 6,355,491).

Zhou teaches an array of electromagnetic biochips and methods of using these chips to manipulate micro-particles and micro-structures such as biomolecules and chemical reagents. The method comprises of magnetically guiding the different magnetic particles each bound to a biomolecule or chemical reagent to each of the chip's surfaces; Manipulating by releasing or immobilizing the micro-particles by controlling the electric current at the designated micro-electromagnetic unit so that the magnetic field on the chip region is stronger than the field on dispenser head. Thus, the microparticles on that individual chip are released at the designated region. Manipulation of magnetic particles refers to the change and control of particle position, velocity, and other kinetic properties by modulating electric currents applied to micro-

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electromagnetic units and accordingly altering magnetic field distribution and forces acting on the particles. Depending on the applications, all units or some of the units may be energized simultaneously or one at a time. The biological agent is a drug candidate molecule, binding molecules such as antigen or antibody. A signaling entity can be a tagged probes or a secondary antibody which specifically binds to the target molecules, and then a the fluorescence are induced by a light source to generate a signal.

Regarding the limitation of claims 9-10, the electromagnet is a combination of an electrode and a magnet. Thus, electromagnet reads on electrode. (see col. 3, lines 48-65; col. 4, lines 28-50; col. 5, lines 1-46; col. 7, lines 54-55; col. 17, lines 45-53; col. 19, lines 55-63).

### ***Remarks***

Claims 13-29 are free of prior arts.

The prior arts fail to teach attaching colloidal particles to the magnetic particles through a binding agent; signaling entities such as metallocene, ferrocene; the step of allowing some of the colloidal particles to bind to some of the magnetic beads via chemical or biological agent/binding partner interaction while leaving some of the magnetic beads unbound; magnetically drawing the magnetic beads to a plurality of predetermined positions; determine the first surface locations at which colloidal particles have been drawn and second surface free of colloid particles; and releasing magnetic beads from the second surface while holding the beads at the first surface; repeating one or more times the above steps.

### ***Conclusion***

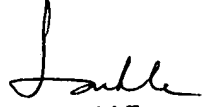
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pensee T. Do whose telephone number is 703-308-4398. The examiner can normally be reached on Monday-Friday, 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 703-305-3399. The fax phone number for the organization where this application or proceeding is assigned is 703-308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Pensee T. Do  
Patent Examiner  
December 11, 2003

  
LONG V. LE  
SUPERVISORY PATENT EXAMINER  
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12/26/03